

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference H2342-01	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/JP2005/002560	International filing date (day/month/year) 18.02.2005	Priority date (day/month/year) 19.02.2004	
International Patent Classification (IPC) or national classification and IPC C30B19/02, C30B29/38			
Applicant MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.			

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of <u>3</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>
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<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</p>
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Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/JP2005/002560

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

 - international search (Rule 12.3 and 23.1(b))
 - publication of the international application (Rule 12.4)
 - international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

the international application as originally filed/furnished

the description:

pages 1-30 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

the claims:

nos. 2-12, 16-22, 26-42 as originally filed/furnished

nos.* _____ as amended (together with any statement) under Article 19

nos.* 1, 14-15, 23-25 received by this Authority on 24.11.2005

nos.* _____ received by this Authority on _____

the drawings:

sheets fig. 1-14 as originally filed/furnished

sheets* _____ received by this Authority on _____

sheets* _____ received by this Authority on _____

a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. The amendments have resulted in the cancellation of:

the description, pages _____

the claims, nos. 13 _____

the drawings, sheets/figs _____

the sequence listing (*specify*): _____

any table(s) related to sequence listing (*specify*): _____
4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

the description, pages _____

the claims, nos. _____

the drawings, sheets/figs _____

the sequence listing (*specify*): _____

any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/JP2005/002560Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	1-12, 14-42	YES
	Claims		NO
Inventive step (IS)	Claims	1-12, 14-42	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-12, 14-42	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Document 1: JP 2004-300024 A (Matsushita Electric Industrial Co., Ltd., et al.), 28 October 2004

Document 2: The Society of Chemical Engineers, Japan, "Kagaku Kogaku Binran," Dai 6 Pan, 1999

Document 3: Fumio KAWAMURA, "Growth of Transparent, Large Size GaN Single Crystal with Low Dislocations Using Ca-Na Flux System," Jpn. J. Appl. Phys., Vol. 42, 2003, pages L729 to L731

Document 4: JP 01-116013 A (Kawasaki Steel Corp.), 09 May 1989

Claims 1 to 12 and 14 to 42

The inventions set forth in claims 1 to 12 and 14 to 42 are novel and involve an inventive step in relation to documents 1 to 4 cited in the international search report.

In particular, documents 1 to 4 do not disclose the technique for growing single crystals of a group III nitride compound "while agitating" the liquid starting material so as to generate a flow whereby the liquid starting material flows from the gas/liquid interface,

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/JP2005/002560

Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

where the liquid starting material comes into contact with the gaseous starting material, towards the interior of the liquid starting material. Furthermore, it would not have been easy for a person skilled in the art to conceive of the technique in question.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2005/002560

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The disclosure in claim 31 is unclear. In particular, claim 31 sets forth a feature wherein the "pipe for connecting the aforementioned container and the outside of the aforementioned heating device has a structure such that at least either the aforementioned liquid starting material or the aforementioned other starting material is less susceptible to coagulation." However, the disclosure "less susceptible to coagulation" is vague, and merely signifies that there is a relatively low possibility of coagulation occurring; meanwhile, the structure of the pipe will differ significantly according to the desired degree of susceptibility to coagulation. Such being the case, the specific configuration of the production method set forth in claim 31, which employs a device for producing single crystals that comprises a pipe with the aforementioned "structure such that at least either the aforementioned liquid starting material or the aforementioned other starting material is less susceptible to coagulation," is unclear.